Amendments to the Specification:

Please amend paragraph **[0003]** to read, as follows.

[0003] Fig. 1 illustrates an example of a conventional developing device 1 suitable for adaptation according to the present invention using a two-component developing agent having non-magnetic toner and a magnetic carrier.

Please amend paragraph **[0006]** to read, as follows.

[0006] The developing agent transported from the stirring chamber 4 to the developing chamber 3 is scooped up by the developing sleeve 8 by means of an N1 pole provided within a magnetic ~~magnet~~ roller 8a which is magnetic field generating means provided in a non-rotating manner within the developing sleeve 8, and the rotations of the developing sleeve 8 bring the developing agent to a first developing area A where a developing magnetic pole S2 is situated, where the developing sleeve 8 and the photosensitive drum 10 face one another. Along the way, the layer of developing agent is subjected to restriction of thickness thereof by means of a developing agent restricting blade 11 which is a developing agent restricting member and a magnetic pole S1 facing the developing agent restricting blade 11 and acting in cooperation therewith. This forms a thin layer of developing agent, whereby the electrostatic latent image is developed at the first developing area A from a magnetic pole N3 situated downstream of the first developing area A in the direction of rotation of the developing sleeve 8 (first developing step).

Please amend paragraphs **[0008]** through **[0010]** to read, as follows.

[0008] The characteristics of the above-described vertical-stirring twin-sleeve developing device 1 include the advantages in that:

(1) The size of the developing device 1 can be reduced due to the two transporting screws 5 and 6 being vertically disposed; and

(2) The number of times that developing can be performed is increased as compared with single-sleeve arrangements due to the developing sleeves 8 and 9 being provided, whereby developing efficiency increases, edge enhancement can be reduced, and further, the rotations of the developing sleeves 8 and 9 can be reduced.

[0009] Now, the materials and configurations of the above-described developing sleeves 8 and 9 are selected as appropriate depending on the type of developing agent to be used. For example, in the event of using a two-component developing agent, a developing sleeve having magnetic field generating means such as a magnet or the like within is used, and primarily non-magnetic metals such as stainless steel or aluminum have conventionally been used as the material of the developing sleeve.

[0010] With a developing device 1 such as described above, the surface of the developing sleeve is subjected to surface-roughening processing, which improves the transporting capabilities of the sleeves transporting the two-component developing agent made up of toner and carrier to the developing areas, and also enables uniform coating of the developing agent on the developing sleeves.

Please amend paragraphs **[0022]** and **[0023]** to read, as follows.

[0022] According to a first aspect of the present invention, a developing device for developing an electrostatic image formed on an image carrying member comprises: a

developing container for containing a developer including toner and carrier; a first developer carrying member for carrying the developer within the developing container and supplying the developer to the electrostatic image formed on the image carrying member; a restricting member for restricting thickness of the developer carried on the first developer carrying member; and a second developer carrying member for carrying the developer received from the first developer carrying member and supplying the developer to the electrostatic image formed on the image carrying member; wherein an average inter-peak distance on the surface of the first developer carrying member is greater than an average inter-peak distance on the surface of the second developer carrying member. This enables fusion of toner on the first developer carrying member due to the restricting member to be prevented, while maintaining the developer transporting capabilities of the second developer carrying member, so high-quality images can be obtained over extensive usage periods.

[0023] According to a second aspect of the present invention, a developing device for developing an electrostatic image formed on an image carrying member, comprises: a developing container for containing a developer including toner and carrier; a first developer carrying member for carrying the developer within the developing container and supplying the developer to the electrostatic image formed on the image carrying member; a restricting member for restricting thickness of the developer carried on the first developer carrying member; and a second developer carrying member for carrying developer received from the first developer carrying member and supplying the developer to the electrostatic image formed on the image carrying member; wherein the expression

$(Rz1/Sm1) < (Rz2/Sm2)$

is satisfied; wherein Sm1 represents an average inter-peak distance on the surface of the first developer carrying member, Sm2 represents an average inter-peak distance on the surface of the second developer carrying member, Rz1 represents a ten-point average roughness of the first developer carrying member, and Rz2 represents a ten-point average roughness of the second developer carrying member.

Please amend paragraph **[0025]** to read, as follows.

[0025] Fig. 1 is a schematic cross-sectional configuration diagram of a conventional developing device suitable for use with an embodiment of the developing device according to the present invention.

Please amend paragraph **[0033]** to read, as follows.

[0033] The stations Y, M, C, and K have drum-shaped electrophotography photosensitive members serving as image carrying members, i.e., photosensitive drums 10 (10Y, 10M, 10C, and 10K). Disposed around the photosensitive drums 10 (10Y, 10M, 10C, and 10K) are primary chargers 11 (11Y, 11M, 11C, and 11K), laser exposing optical systems 12 (12Y, 12M, 12C, and 12K), developing devices 1 (1Y, 1M, 1C, and 1K), transfer devices 13 (13Y, 13M, 13C, and 13K), and cleaning devices 14 (14Y, 14M, 14C, and 14K). A recording medium transporting belt 15 for transporting a [[the]] recording medium P is stretched between rollers 16 and 17, below the photosensitive drums 10 (10Y, 10M, 10C, and 10K).

Please amend paragraphs **[0037]** through **[0045]** to read, as follows.

[0037] The toner image is transferred by the transfer device 13 onto a recording medium P which is transported by the recording medium transporting belt 15, for each of the stations Y, M, C, and K, and further fixed by a [[the]] fixer 18, so as to obtain a permanent image. Any toner remaining on the photosensitive drum 10 following transfer is removed by the cleaning device 14.

[0038] The toner from the developing agent (developer) made up of magnetic carrier and non-magnetic toner (hereafter referred to simply as "toner") consumed in the image formation is constantly replenished from a toner replenishing vat 20(20Y, 20M, 20C, and 20K). [[20.]]

[0039] With the present embodiment, a method is used wherein the toner image is directly transferred from the photosensitive drums 10 (10Y, 10M, 10C, and 10K) onto the recording medium P transported by the recording medium transporting belt 15, but an arrangement may be made to which the present invention can be suitably applied wherein an intermediate transfer medium is provided instead of the recording medium transporting belt 15, and following transfer of the toner images of each color from the photosensitive drums 10M, 10C, 10Y, and 10K, onto the intermediate transfer medium, the combined toner image is subjected to secondary transfer to the recording medium P all at once.

[0040] Next, the developing device 1 adapted according to the present invention will be described. It should be noted that the developing device 1 according to the present invention is not restricted to that described below, but can be suitably carried out in the developing device 1 described with reference to Fig. 1. The configuration and actions of the developing device 1 will be described in further detail.

[0041] The developing device 1 suitable for adaptation according to the present embodiment of the invention has a developing container 2 storing a two-component developing agent including non-magnetic toner and magnetic carrier, and disposed inside the developing container 2 are two transporting screws 5 and 6 for stirring and transporting the developing agent, and first and second developing sleeves 8 and 9 serving as first and second developer carrying members. Also, a restricting blade 11 serving as a restricting member for restricting the thickness of the developing agent carried on the surface of the first developing sleeve 8, is positioned so to face the first developing sleeve 8.

[0042] In further detail, the developing device 1 has the first developing sleeve 8 and the second developing sleeve 9 serving as developing agent carrying members disposed one upon another at an opening of the developing container 2 facing the photosensitive drum 10. A developing chamber 3 and a stirring chamber 4 separated by a partitioning wall 7 are formed at the far side from the opening of the developing container 2, with the developing chamber 3 formed above the stirring chamber 4, with the first and second transporting screws 5 and 6 serving as the developing agent stirring and transporting means disposed within the developing chamber 3 and stirring chamber 4, respectively. The first transporting screw 5 transports developing agent within the developing chamber 3, and the second transporting screw 6 transports the toner supplied from above the second transporting screw 6 from the toner replenishing vat 20 to the stirring chamber 4, and the developing agent already within the stirring chamber 4, while stirring.

[0043] The developing agent transported from the developing chamber 3 to the first developing sleeve 8 is scooped up by the developing sleeve 8 by means of an N1 pole provided within a magnetic ~~magnet~~ roller 8a which is magnetic field generating means provided in a non-rotating manner within the first developing sleeve 8, and the rotations of the first developing sleeve 8 transport the developing agent on the first developing sleeve 8 from a magnetic pole S1 to N2, and bring the developing agent to a first developing area A where a [[the]] developing magnetic pole S2 is situated, where the developing sleeve 8 and the photosensitive drum 10 face one another. At this time, the developing agent is magnetically formed into a magnetic brush by the magnetic roller 8a, ~~magnet roller,~~ and the magnetic brush formed of the developing agent comes into contact with the surface of the photosensitive drum 10. ~~drum.~~ Along the way, the layer of developing agent is subjected to restriction of thickness thereof by means of the [[a]] developing agent restricting blade 11 which is a developing agent restricting member and a magnetic pole S1 facing the developing agent restricting blade 11 and acting in cooperation therewith. This forms a thin layer of developing agent, so as to perform the first developing step at the first developing area A.

[0044] Subsequently, the developing agent is handed to a magnetic pole S3 of a magnetic roller 9a which is magnetic field generating means provided in a non-rotating manner within the second developing sleeve 9, from a magnetic pole N3 downstream in the direction of rotation of the first developing sleeve 8 from the first developing area A. Next, the developing agent is carried and transported by the second developing sleeve 9 and reaches a second developing area B where the second developing sleeve 9 and the photosensitive drum 10 face one another, to be supplied to the second developing step.

The magnetic brush on the second developing sleeve 9 is formed at the second developing area B, and comes into contact with the surface of the photosensitive drum 10. ~~drum.~~

[0045] The developing agent remaining at the second developing area B without being developed is transported into the developing container 2 by a magnetic pole S4 downstream in the direction of rotation of the second developing sleeve 9 from the second developing area B, is removed from the developing sleeve 9 by the repelling magnetic field of [[the]] magnetic poles S3 and S4, and is recovered into the stirring chamber 4 at the lower portion of the developing container 2. Subsequently, the recovered developing agent is transported to the developing chamber again, while being stirred with the replenished toner. This completes the cycle of developing agent with the developing device 1 according to the present embodiment.

Please amend paragraphs **[0049]** and **[0050]** to read, as follows.

[0049] Also, a magnetic field for handing the developing agent from the first developing sleeve 8 to the second developing sleeve 9 may be formed with the developing magnet within the first developing sleeve 8 (opposite polarity to the magnet around the nearest portion) and the developing magnet within the second developing sleeve 9 (opposite polarity to the magnet around the nearest portion), with same poles facing one another around the nearest portion. With this configuration, there is almost no formation of the magnetic brush between the developing sleeves, so sleeve staining at the portion for handing over the developing agent can be completely prevented.

[0050] Next, the surface configuration of the first and second developing sleeves 8 and 9, which characterize the developing device 1 according to the present invention, will be described in detail.

Please amend paragraph **[0053]** to read, as follows.

[0053] Also, the inter-peak distance Sm should be understood as follows. As shown in Fig. 2, a portion of a reference length (measurement length) L is cut out from the cross-sectional curve D of the surface that has been subjected to roughening processing. In this cross-sectional curve D, the distance from the first point intersecting a center line C following a peak and leading to a trough to the next point intersecting the center line following a peak and leading to a trough is S1, and the subsequent distances between like intersection points are [[then]] S2, S3, and so on through Sn (wherein n is the total number of such intersection points within the reference length). The average inter-peak distance [[Sm]] is obtained by adding these distances S1 through Sn and dividing by n, ~~averaging these values,~~ and is expressed by Sn in the following expression: ~~expression, i.e., definitively,~~

$$Sm = (S1 + S2 + \cdots Sn)/n$$

Thus, the ~~inter-peak~~ distance Sm represents the average distance between adjacent peaks on the surface of the developing sleeve.

~~$Sm = (S1 + S2 + \cdots Sn)/n$~~

Please amend paragraph **[0069]** to read, as follows.

[0069] As can be understood from Figs. 3A and 3B, ~~Fig. 3,~~ the profile obtained by the third experiment example has a curvature of the curve forming the peaks and troughs which is different from that of the sleeve according to the second experiment example, and is extremely smooth. Particularly, the developing sleeve according to the third experiment example has few minute recesses in the troughs, and detailed examination of the sleeve surface revealed that while the sleeve according to the second experiment example had approximately 30 recesses 1 μm in width and 0.5 μm in depth or more (portions indicted by the downward arrows in the drawings) over a length of 100 μm, the number was approximately 10 with the sleeve according to the third experiment example. This is thought to be due to reduction of small coarse formations on the surface of the sleeve owing to blasting with the determinate-form spherical particles, and this is assumed to be an improvement since fewer toner particles will become caught on the minute coarse formations.

Please amend paragraph **[0077]** to read, as follows.

[0077] Now, increasing the ten-point average roughness Rz value allows the toner to catch more readily on the recesses of the surface, which is though to tend to worsen the staining level of the developing sleeve, but as described above, the staining of the second developing sleeve 9 is not as bad as that of the first developing sleeve 8 with the twin sleeve developing method as described above, so there is no problem as far as practical usage goes as long as the Sm is adjusted to a slightly higher level. Also, blasting with the non-determinate-form particles creates fine rough formations on the surface, which

improves transporting capabilities of [[f]] the developing agent, thereby preventing deterioration of image quality.